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(54) Title: PROJECTION ALIGNER FOR INTEGRATED CIRCUIT FABRICATION

(57) Abstract

A known projection aligner for integrated circuit fabrication, in which an integrated circuit pattern image is projected on a wafer, comprises an ArF excimer laser (1) and an optical system (5) comprising three groups of quartz glass optical members made of synthetic quartz glass. To provide a projection aligner having optical properties, such as transmittance, which are not degraded over a long time of operation and so that the optical system can be constructed at a low cost as a whole, it is suggested that the first quartz glass optical member group which is subjected to relatively low energy densities has a hydrogen molecule concentration in the range between 1×10^{17} and 5×10^{18} molecules/cm³ and that the third quartz glass optical member group (5a, 5b) which is subjected to relatively high energy densities has a hydrogen molecule concentration in the range between 5×10^{18} to 5×10^{19} molecules/cm³.

